SLAMDUNK:
SELLING FRAME RELAY INTO THE SNA ENVIRONMENT

Frame Relay Service for SNA Network

An application story

The customer is a regional bank with operations in a multi-state area. They have a major project underway to change to their management information systems infrastructure in order to allow them to compete more successfully in the future.

The bank operates two data processing centers which provide information services to the branches. Their long-term strategy is to gradually change from terminal/host architecture to distributed client/server computing. Because of their extensive investment in mainframe hardware and software, they require that their new network accommodate both Systems Network Architecture (SNA) and Local Area Network (LAN) traffic.

Frame relay service has been proposed to the bank as a alternative to its existing private line Wide Area Network (WAN). Frame relay is believed to offer the bank improved data throughput and lower communications cost.

Customer Objective

For this project the bank wants to:

- Increase network speed and availability and decrease inquiry response time,
- Provide for interconnection between different hosts and local area networks,
- Provide for cost-effective transport of data packets, accommodate bursty data traffic, and support transparency between different communications protocols.

Customer Need

The bank's technology group operates the two data processing centers. These centers provide Information Services (IS) to the branches. At each host site is a IBM 309X series mainframe that utilizes an IBM 3745 communications controller to front end the traffic to and from the branches. The current network architecture is terminal/host employing IBM's Systems Network Architecture.

The IS group is making several significant changes to their computing architecture which dictate changes to their network. First, an "any-to-any" connectivity scheme is being engineered into the data processing systems. Previously, half of the branches networked to one host for their IS needs with the rest connected to the other mainframe. File sharing and disaster recovery backup was provided by links between the two centers. The new configuration will allow workstation access to software or files on either host.

The second project affecting their networking needs is the replacement of "dumb" terminals with personal computers. The branches are migrating from 4700 workstations to PS/2 personal computers running IBM's OS/2 operating system and interconnected in the branch over a token ring local area network (LAN). This is a part of the bank's strategy to move to client/server computing. In the future the mainframe will act as large file server for selected applications. In this arrangement, users will be able to access data without being concerned about where it is stored or how it is formatted. The new network will require support for both TCP/IP and LU6.2 communications protocols.

Solution

Frame relay service is being proposed to the bank as a replacement for their existing private line T1 backbone network. Frame relay is being considered because it allows better internetworking between the bank's LANs. It provides a more cost-effective connectivity for multiple communications architectures, including hierarchical and "any-to-any" distributed processing.

Frame relay also offers the bank a migration to IBM's Data Link Switching (DSL), which seamlessly marries SNA and LAN traffic into one network. When the bank eventually implements DLS, workstations in the branches will easily access information on either host or from LAN servers located in other branches. Frame relay offers high-speed facilities, bandwidth-on-demand and protects the bank's existing investment in CPE by handling multiple protocol traffic. The bank will use their 3745 network processors to gain access, concentrate and route traffic over a frame relay network. The 3745s will provide direct mapping of SNA traffic over the frame relay.

Benefits

On the surface, frame relay's advantages are similar to those of traditional packet switching X.25. It offers the bank very low bit-error rates, handles higher traffic volumes, yields lower end-to-end latency and is more transparent to higher-level protocols, such as SNA, TCP/IP and NetBIOS. Frame relay's statistical multiplexing switching places all traffic onto shared bandwidth thus offering bandwidth savings.

Additionally, it is expected that frame relay will result in lower operating cost because the number of local loops, circuit end points, and WAN ports may be less than the current configuration. This should translate into lower data CPE requirements and reduced capital investment. Also it is projected that frame relay's communications costs will be less sensitive to distance pricing than their current T1 service.